The Mystery of the Sunken Compass

Grade 5 math · Multiplication, Place value, Rounding, Fractions of a number, Division · Reading level grades 5-6

Detective: _____ **Date:** _____

A famous Golden Compass was stolen from the high vault at Stormy Atoll Museum! Detective, examine the clues, decode the evidence, and track down the culprit before they sail away.

1. Solve each math problem. The answer is a number, and the letter beside it is what that number stands for.
2. In the clue boxes, write that letter in every box showing the same number, then read the secret clue.
3. Use each clue to cross suspects off the list. The one suspect left at the end is the culprit!

My answer: the rogue explorer is _____

Possible suspects

Cross off a row as each clue rules it out. The one left at the end is the culprit.

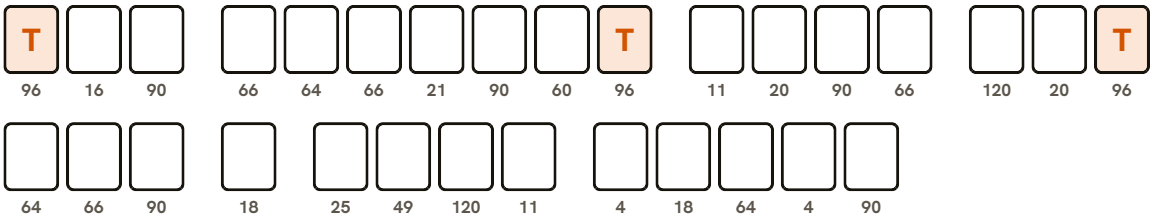
NAME	EXPEDITION TOOL	SKY GADGET	WANDERING HABIT	BANDANA COLOR	TRAP VULNERABILITY
Dante Brooks	Brass Compass	Smoke Bomb	Taps Left Foot	Crimson Red	Loud Whistles
Lyra Song	Grappling Hook	Pocket Scope	Taps Right Foot	Midnight Black	Flash Powder
Captain Avery	Signal Flare	Echo Whistle	Taps Left Foot	Crimson Red	Flash Powder
Nora Drake	Grappling Hook	Echo Whistle	Taps Right Foot	Golden Yellow	Net Traps
Hugo Reyes	Sturdy Machete	Echo Whistle	Taps Right Foot	Crimson Red	Loud Whistles
Finn OConnor	Brass Compass	Pocket Scope	Taps Left Foot	Crimson Red	Loud Whistles
Vera Scott	Grappling Hook	Smoke Bomb	Taps Left Foot	Crimson Red	Loud Whistles
Freya Lind	Diving Bell	Smoke Bomb	Taps Right Foot	Crimson Red	Flash Powder
Jax River	Signal Flare	Wind Gauge	Taps Left Foot	Crimson Red	Loud Whistles
Clara Vance	Sturdy Machete	Smoke Bomb	Taps Right Foot	Golden Yellow	Flash Powder
Cyrus Stone	Signal Flare	Wind Gauge	Taps Right Foot	Crimson Red	Loud Whistles
Maya Lin	Sturdy Machete	Smoke Bomb	Taps Left Foot	Golden Yellow	Net Traps
Gideon Ray	Sturdy Machete	Echo Whistle	Taps Left Foot	Midnight Black	Loud Whistles
Zoe Chen	Signal Flare	Pocket Scope	Taps Right Foot	Crimson Red	Loud Whistles
Iris West	Diving Bell	Pocket Scope	Taps Left Foot	Crimson Red	Loud Whistles
Elena Cruz	Grappling Hook	Smoke Bomb	Taps Right Foot	Crimson Red	Net Traps
Leo Sterling	Brass Compass	Glider Pack	Taps Left Foot	Midnight Black	Loud Whistles
Talia Frost	Grappling Hook	Echo Whistle	Taps Left Foot	Golden Yellow	Flash Powder
Tobias Hale	Brass Compass	Echo Whistle	Taps Left Foot	Midnight Black	Loud Whistles
Orion Blake	Sturdy Machete	Smoke Bomb	Taps Left Foot	Crimson Red	Net Traps
Silas Finch	Diving Bell	Smoke Bomb	Taps Left Foot	Golden Yellow	Net Traps

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CLUE 1 Multiplication facts (1-12)

> To find where the rogue explorer fled, you calculate the total crate count stacked in equal rows across the supply deck.

Solve each problem, then write its letter in every clue box that shows the same number.



8 × 12 = ☐ → T

10 × 6 = ☐ → C

10 × 9 = ☐ → E

9 × 2 = ☐ → A

8 × 8 = ☐ → U

12 × 10 = ☐ → N

5 × 5 = ☐ → W

6 × 11 = ☐ → S

8 × 2 = ☐ → H

3 × 7 = ☐ → P

4 × 1 = ☐ → G

7 × 7 = ☐ → I

1 × 11 = ☐ → D

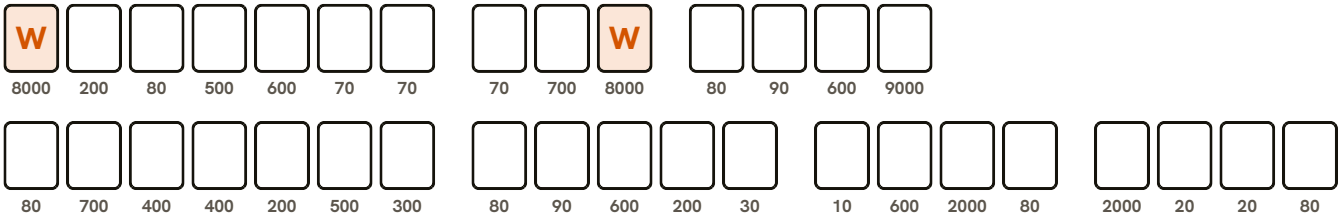
2 × 10 = ☐ → O

Scratch space:

CLUE 2 Place value

A locked chest requires a code, where you examine the digit in the thousands place on the ship register.

Solve each problem, then write its letter in every clue box that shows the same number.



What is the value of the 8 in 38,651? ☐ → W

What is the value of the 2 in 65,821? ☐ → O

What is the value of the 4 in 533,496? ☐ → P

What is the value of the 8 in 464,783? ☐ → T

What is the value of the 3 in 62,839? ☐ → R

What is the value of the 7 in 52,873? ☐ → S

What is the value of the 7 in 900,734? ☐ → A

What is the value of the 9 in 779,318? ☐ → M

What is the value of the 5 in 643,508? ☐ → N

What is the value of the 6 in 751,692? ☐ → E

What is the value of the 3 in 259,322? ☐ → G

What is the value of the 2 in 92,747? ☐ → F

What is the value of the 9 in 72,695? ☐ → H

What is the value of the 2 in 45,243? ☐ → I

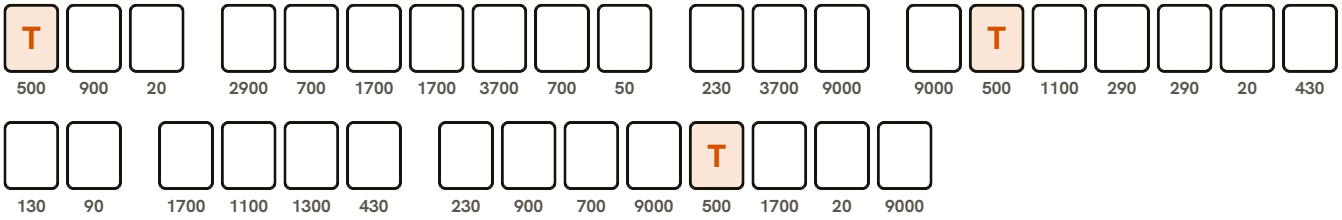
What is the value of the 1 in 62,619? ☐ → L

Scratch space:

CLUE 3 Rounding

The storm radar only gives approximate distances, so you round the flight path mileage to the nearest hundred.

Solve each problem, then write its letter in every clue box that shows the same number.



Round 518 to the nearest hundred ☐ → **T**

Round 2,931 to the nearest hundred ☐ → **V**

Round 3,748 to the nearest hundred ☐ → **A**

Round 945 to the nearest hundred ☐ → **H**

Round 89 to the nearest ten ☐ → **Y**

Round 8,633 to the nearest thousand ☐ → **S**

Round 127 to the nearest ten ☐ → **B**

Round 718 to the nearest hundred ☐ → **I**

Round 426 to the nearest ten ☐ → **D**

Round 1,346 to the nearest hundred ☐ → **U**

Round 233 to the nearest ten ☐ → **W**

Round 1,715 to the nearest hundred ☐ → **L**

Round 289 to the nearest ten ☐ → **P**

Round 19 to the nearest ten ☐ → **E**

Round 1,144 to the nearest hundred ☐ → **O**

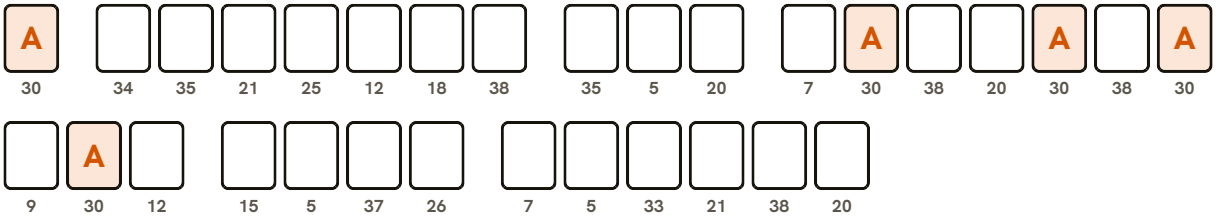
Round 48 to the nearest ten ☐ → **N**

Scratch space:

CLUE 4 Fractions of a number

You divide the total map grid into equal sectors to check a fraction of the search zone for clues.

Solve each problem, then write its letter in every clue box that shows the same number.



2/6 of 90 = ☐ → A

6/8 of 44 = ☐ → H

1/6 of 90 = ☐ → L

6/8 of 16 = ☐ → S

5/6 of 6 = ☐ → E

1/10 of 70 = ☐ → B

1/6 of 126 = ☐ → I

3/6 of 52 = ☐ → T

2/6 of 60 = ☐ → D

1/5 of 90 = ☐ → O

2/8 of 152 = ☐ → N

1/3 of 111 = ☐ → F

2/8 of 136 = ☐ → C

3/10 of 30 = ☐ → W

4/8 of 70 = ☐ → R

5/6 of 30 = ☐ → M

Scratch space:

CLUE 5 Division facts (1-12) - the last clue

> To figure out how many crew members were posted per lookout, you divide the total guards evenly among the towers.

First solve each problem. Then find each answer in the numbered list below and cross that sentence out. One sentence will be left - that is exactly what the villain did!

Step 1 - solve these:

4 ÷ 4 = ☐	36 ÷ 4 = ☐	88 ÷ 8 = ☐	80 ÷ 8 = ☐	35 ÷ 7 = ☐
18 ÷ 9 = ☐	16 ÷ 4 = ☐	32 ÷ 4 = ☐	7 ÷ 1 = ☐	144 ÷ 12 = ☐
30 ÷ 5 = ☐				

Step 2 - cross out the sentence with each answer:

1. The villain bypassed the vault doors, then vanished behind a smoke bomb.
2. The villain disabled the alarm system, then vanished behind a smoke bomb.
3. The villain snatched the golden relic, then scanned the area with a pocket scope.
4. The villain snatched the golden relic, then calibrated the wind gauge.
5. The villain bypassed the vault doors, then calibrated the wind gauge.
6. The villain scaled the observation tower, then scanned the area with a pocket scope.
7. The villain scaled the observation tower, then vanished behind a smoke bomb.
8. The villain scaled the observation tower, then calibrated the wind gauge.
9. The villain unlocked the display case, then vanished behind a smoke bomb.
10. The villain bypassed the vault doors, then signaled crew with an echo whistle.
11. The villain unlocked the display case, then scanned the area with a pocket scope.
12. The villain snatched the golden relic, then signaled crew with an echo whistle.

TEACHER / PARENT

Answer Key

The Mystery of the Sunken Compass

Culprit: Iris West

Diving Bell · Pocket Scope · Taps Left Foot · Crimson Red · Loud Whistles

Trail: Start 21 → Clue 1 19 → Clue 2 12 → Clue 3 7 → Clue 4 4 → Clue 5 1

Clue 1 (Multiplication facts (1-12)): "THE SUSPECT DOES NOT USE A WIND GAUGE"

8 × 12 = 96 (T) · 10 × 6 = 60 (C) · 10 × 9 = 90 (E) · 9 × 2 = 18 (A) · 8 × 8 = 64 (U) · 12 × 10 = 120 (N) · 5 × 5 = 25 (W) · 6 × 11 = 66 (S) · 8 × 2 = 16 (H) · 3 × 7 = 21 (P) · 4 × 1 = 4 (G) · 7 × 7 = 49 (I) · 1 × 11 = 11 (D) · 2 × 10 = 20 (O)

Clue 2 (Place value): "WITNESS SAW THEM TAPPING THEIR LEFT FOOT"

What is the value of the 8 in 38,651? = 8000 (W) · What is the value of the 2 in 65,821? = 20 (O) · What is the value of the 4 in 533,496? = 400 (P) · What is the value of the 8 in 464,783? = 80 (T) · What is the value of the 3 in 62,839? = 30 (R) · What is the value of the 7 in 52,873? = 70 (S) · What is the value of the 7 in 900,734? = 700 (A) · What is the value of the 9 in 779,318? = 9000 (M) · What is the value of the 5 in 643,508? = 500 (N) · What is the value of the 6 in 751,692? = 600 (E) · What is the value of the 3 in 259,322? = 300 (G) · What is the value of the 2 in 92,747? = 2000 (F) · What is the value of the 9 in 72,695? = 90 (H) · What is the value of the 2 in 45,243? = 200 (I) · What is the value of the 1 in 62,619? = 10 (L)

Clue 3 (Rounding): "THE VILLAIN WAS STOPPED BY LOUD WHISTLES"

Round 518 to the nearest hundred = 500 (T) · Round 2,931 to the nearest hundred = 2900 (V) · Round 3,748 to the nearest hundred = 3700 (A) · Round 945 to the nearest hundred = 900 (H) · Round 89 to the nearest ten = 90 (Y) · Round 8,633 to the nearest thousand = 9000 (S) · Round 127 to the nearest ten = 130 (B) · Round 718 to the nearest hundred = 700 (I) · Round 426 to the nearest ten = 430 (D) · Round 1,346 to the nearest hundred = 1300 (U) · Round 233 to the nearest ten = 230 (W) · Round 1,715 to the nearest hundred = 1700 (L) · Round 289 to the nearest ten = 290 (P) · Round 19 to the nearest ten = 20 (E) · Round 1,144 to the nearest hundred = 1100 (O) · Round 48 to the nearest ten = 50 (N)

Clue 4 (Fractions of a number): "A CRIMSON RED BANDANA WAS LEFT BEHIND"

2/6 of 90 = 30 (A) · 6/8 of 44 = 33 (H) · 1/6 of 90 = 15 (L) · 6/8 of 16 = 12 (S) · 5/6 of 6 = 5 (E) · 1/10 of 70 = 7 (B) · 1/6 of 126 = 21 (I) · 3/6 of 52 = 26 (T) · 2/6 of 60 = 20 (D) · 1/5 of 90 = 18 (O) · 2/8 of 152 = 38 (N) · 1/3 of 111 = 37 (F) · 2/8 of 136 = 34 (C) · 3/10 of 30 = 9 (W) · 4/8 of 70 = 35 (R) · 5/6 of 30 = 25 (M)

Clue 5 (Division facts (1-12)): surviving statement is box 3 → Iris West

4 ÷ 4 = 1 · 36 ÷ 4 = 9 · 88 ÷ 8 = 11 · 80 ÷ 8 = 10 · 35 ÷ 7 = 5 · 18 ÷ 9 = 2 · 16 ÷ 4 = 4 · 32 ÷ 4 = 8 · 7 ÷ 1 = 7 · 144 ÷ 12 = 12 · 30 ÷ 5 = 6